WHAT IS CLAIMED IS:

1. A serial recording apparatus, comprising:

a feeding device including a feeding roller and a drive source which rotates the feeding roller and thereby feeds a recording medium in a feeding direction;

a recording head which records an image on the recording medium when the recording head is moved in a recording direction substantially perpendicular to the feeding direction and includes at least one array of recording elements arranged in a direction intersecting the recording direction; and

a control device which controls, based on a length of the array of recording elements in the feeding direction and an effective diameter of the feeding roller, an amount of operation of the drive source, and thereby controls an amount of feeding of the recording medium in the feeding direction.

2. A serial recording apparatus, comprising:

a feeding device including a feeding roller and a drive source which rotates the feeding roller and thereby feeds a recording medium in a feeding direction;

a recording head which records an image on the recording medium when the recording head is moved in a recording direction substantially perpendicular to the feeding direction and includes at least one array of recording elements arranged in a direction intersecting the recording direction; and

a control device which controls, based on a length of

the array of recording elements in the feeding direction and an effective diameter of the feeding roller, an amount of operation of the drive source, and thereby controls an amount of feeding of the recording medium in the feeding direction, each time the feeding device feeds the recording medium in the feeding direction.

3. The apparatus according to claim 1, wherein the control device comprises a correcting portion which determines a difference between the length of the array of recording elements in the feeding direction and a provisional amount of feeding of the recording medium obtained based on the effective diameter of the feeding roller and a reference amount of operation of the drive source, and corrects, based on the determined difference, the reference amount of operation of the drive source into a corrected amount of operation of the drive source, so that the feeding device feeds the recording medium by a corrected feeding amount corresponding to the corrected amount of operation of the drive source.

4. The apparatus according to claim 3, wherein the correcting portion modifies, based on a sort of the recording medium, a measured diameter of the feeding roller, into the effective diameter, and determines the difference between the length of the array of recording elements and the provisional amount of feeding of the recording medium obtained based on the effective diameter of the feeding roller and the reference amount of operation of the drive source.

5. The apparatus according to claim 2, wherein the control device comprises a correcting portion which determines, each time the feeding device feeds the recording medium, an accumulated error of feeding of the recording medium by the feeding device relative to the recording head, and corrects a reference amount of operation of the drive source into a corrected amount of operation of the drive source, so that the feeding device feeds the recording medium by a corrected feeding amount corresponding to the corrected amount of operation of the drive source and the accumulated error falls in a reference range.

6. The apparatus according to claim 5, wherein each time before the feeding device feeds the recording medium, the correcting portion determines the accumulated error, and corrects, when the determined accumulated error does not fall in the reference range, the reference amount of operation of the drive source into the corrected amount of operation of the drive source.

7. The apparatus according to claim 5, wherein the correcting portion determines, each time the feeding device feeds the recording medium, a difference by subtracting the length of the array of recording elements from a provisional amount of feeding of the recording medium obtained based on the effective diameter of the feeding roller and the reference amount of operation of the drive source, divides the determined difference

by a smallest unit amount of the recording medium that can be fed by the feeding device, into an integer as a quotient and a remainder whose absolute value is smaller than the smallest unit amount of feeding of the recording medium, and determines the accumulated error which is equal to a product of the remainder and one plus a number of times by which the feeding device has fed the recording medium, wherein when the accumulated error is greater than an upper limit of the reference range, the correcting portion corrects the reference amount of operation of the drive source, by subtracting, from the reference amount of operation of the drive source, a first correction amount of operation of the drive source corresponding to a first product of a first positive integer and the smallest unit amount of feeding of the recording medium and, when the accumulated error is smaller than a lower limit of the reference range, the correcting portion corrects the reference amount of operation of the drive source, by adding, to the reference amount of operation of the drive source, a second correction amount of operation of the drive source corresponding to a second product of a second positive integer and the smallest unit amount of feeding of the recording medium, and wherein the correcting portion updates the accumulated error, by subtracting, when the accumulated error is greater than the upper limit of the reference range, the first product from the accumulated error and adding, when the accumulated error is smaller than the lower limit of the reference range, the second product to the accumulated error.

8. The apparatus according to claim 7, wherein the upper limit of the reference range is equal to a product of +1/2 and the smallest unit amount of feeding of the recording medium, and the lower limit of the reference range is equal to a product of −1/2 and the smallest unit amount of feeding of the recording medium.

9. The apparatus according to claim 8, wherein each of the first and second integers is equal to 1, wherein when the accumulated error is greater than the upper limit of the reference range, the correcting portion corrects the reference amount of operation of the drive source, by subtracting, from the reference amount of operation of the drive source, the first correction amount of operation of the drive source corresponding to the smallest unit amount of feeding of the recording medium and, when the accumulated error is smaller than the lower limit of the reference range, the correcting portion corrects the reference amount of operation of the drive source, by adding, to the reference amount of operation of the drive source, the second correction amount of operation of the drive source corresponding to the smallest unit amount of feeding of the recording medium, and wherein the correcting portion updates the accumulated error, by subtracting, when the accumulated error is greater than the upper limit of the reference range, the first product equal to the smallest unit amount of feeding of the recording medium, from the accumulated error and adding, when the accumulated error is smaller than the lower limit of the reference range, the

second product equal to the smallest unit amount of feeding of the recording medium, to the accumulated error.

10. The apparatus according to claim 1, further comprising a recording-mode selecting device which is operable to select one of a plurality of recording modes corresponding to different resolutions of recording.

11. The apparatus according to claim 1, wherein the recording head comprises an ink jet recording head including at least one array of ink jet recording elements each of which outputs an ink toward the recording medium to record the image thereon.

12. A serial recording method, comprising the steps of

feeding, with a feeding roller and a drive source which rotates the feeding roller, a recording medium in a feeding direction,

recording, with a recording head, an image on the recording medium when the recording head is moved in a recording direction substantially perpendicular to the feeding direction, the recording head including at least one array of recording elements arranged in a direction intersecting the recording direction, and

controlling, based on a length of the array of recording elements in the feeding direction and an effective

diameter of the feeding roller, an amount of operation of the drive source, and thereby controlling an amount of feeding of the recording medium in the feeding direction.

13. A serial recording method, comprising the steps of

feeding, with a feeding roller and a drive source which rotates the feeding roller, a recording medium in a feeding direction,

recording, with a recording head, an image on the recording medium when the recording head is moved in a recording direction substantially perpendicular to the feeding direction, the recording head including at least one array of recording elements arranged in a direction intersecting the recording direction, and

controlling, based on a length of the array of recording elements in the feeding direction and an effective diameter of the feeding roller, an amount of operation of the drive source, and thereby controlling an amount of feeding of the recording medium in the feeding direction, each time the recording medium is fed in the feeding direction.

14. The method according to claim 12, wherein the step of controlling comprises determining a difference between the length of the array of recording elements in the feeding direction and a provisional amount of feeding of the recording medium obtained based on the effective diameter of the

feeding roller and a reference amount of operation of the drive source, and correcting, based on the determined difference, the reference amount of operation of the drive source into a corrected amount of operation of the drive source, so that the recording medium is fed by a corrected feeding amount corresponding to the corrected amount of operation of the drive source.

15. The method according to claim 13, wherein the step of controlling comprises determining, each time the recording medium is fed, an accumulated error of feeding of the recording medium relative to the recording head, and correcting a reference amount of operation of the drive source into a corrected amount of operation of the drive source, so that the recording medium is fed by a corrected feeding amount corresponding to the corrected amount of operation of the drive source and the accumulated error falls in a reference range.

16. The method according to claim 12, wherein the step of recording comprises recording the image on the recording medium, with an ink jet recording head including at least one array of ink jet recording elements each of which outputs an ink toward the recording medium.

17. A computer-readable computer program product containing a computer program for carrying out a serial recording method, the method including the steps of

feeding, with a feeding roller and a drive source

which rotates the feeding roller, a recording medium in a feeding direction,

recording, with a recording head, an image on the recording medium when the recording head is moved in a recording direction substantially perpendicular to the feeding direction, the recording head including at least one array of recording elements arranged in a direction intersecting the recording direction, and

controlling, based on a length of the array of recording elements in the feeding direction and an effective diameter of the feeding roller, an amount of operation of the drive source, and thereby controlling an amount of feeding of the recording medium in the feeding direction.

18. A computer-readable computer program product containing a computer program for carrying out a serial recording method, the method including the steps of

feeding, with a feeding roller and a drive source which rotates the feeding roller, a recording medium in a feeding direction,

recording, with a recording head, an image on the recording medium when the recording head is moved in a recording direction substantially perpendicular to the feeding direction, the recording head including at least one array of recording elements arranged in a direction intersecting the recording direction, and

controlling, based on a length of the array of

recording elements in the feeding direction and an effective diameter of the feeding roller, an amount of operation of the drive source, and thereby controlling an amount of feeding of the recording medium in the feeding direction, each time the recording medium is fed in the feeding direction.

19. The product according to claim 17, wherein the step of controlling comprises determining a difference between the length of the array of recording elements in the feeding direction and a provisional amount of feeding of the recording medium obtained based on the effective diameter of the feeding roller and a reference amount of operation of the drive source, and correcting, based on the determined difference, the reference amount of operation of the drive source into a corrected amount of operation of the drive source, so that the recording medium is fed by a corrected feeding amount corresponding to the corrected amount of operation of the drive source.

20. The product according to claim 18, wherein the step of controlling comprises determining, each time the recording medium is fed, an accumulated error of feeding of the recording medium relative to the recording head, and correcting the reference amount of operation of the drive source into a corrected amount of operation of the drive source, so that the recording medium is fed by a corrected feeding amount corresponding to the corrected amount of operation of the drive source and the accumulated error falls in a reference range.

21. The product according to claim 17, wherein the step of recording comprises recording the image on the recording medium, with an ink jet recording head including at least one array of ink jet recording elements each of which outputs an ink toward the recording medium.